***The following semi-structured interview is addressed to a panel of at least 15 innovative firms operating in the manufacturing sector across 3 European Countries, namely Italy, Slovenia and Spain. The interview has been designed to be filled either electronically or in person/by telephone. The interview is structured as follows:***

***Section 1 – Innovation & technology: impacts on skills & work organisation***

***Section 2 – Industrial/Employee relations***

***Section 3 – European Social Dialogue: insights and comments***

***Section 4 – Company profile***

***Section 1 – Innovation & technology: impacts on skills & work organisation***

***1. In your opinion, during the past 5 years, which have been the main drivers of change in EU workplaces? (multiple choice – max 3 answers)***

* *Organisational model*
* *Technology (machines, ICT systems)*
* *Products or services*
* *Servitisation*
* *Other (please, specify:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)*

***2. During the past 5 years, has your Company made substantial investments to digitize the production process/its main activities?*** *(multiple choice)*

* *Yes (please, go to question 2.1)*
* *No (please, go to question 2.2)*
* *Don’t know*

***2.1 What kind of digital technologies did your Company introduce? (multiple choice – max 3 answers)***

* *Advanced Manufacturing Solutions (e.g. autonomous robots)*
* *Additive Manufacturing (e.g. 3-D printing)*
* *Augmented Reality*
* *Simulation*
* *Internet of Things*
* *Cloud Manufacturing*
* *Big Data and Analytics*
* *Cybersecurity*
* *Cyber Physical Systems/Digital twins*
* *Other (please, specify:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)*

***2.2. Is your Company willing to invest in digital technologies in the future?***

* *Yes*
* *No*
* *Don’t know*

***3. Which main benefits did your Company get or expect to gain from the use of digital technologies? Please rate the following aspects [1 = no improvement – 5= significant improvement]***

*New services to customers*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

*Customisation of products*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

*Reduction in delivery schedules and flexibility in response to a customer’s request*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

*Better integration between customers and suppliers in the exchange of information*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

*Labour Productivity improvements*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

*Wellbeing at work*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

*Time-to-market*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

*Cost reduction*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

*Environmental impact*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

*Health & Safety at work*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

*Other (please, specify & rate ………………………….)*

***4. How have jobs changed in your Company with the introduction of digital technologies?* *(single answer question)***

* *New jobs have emerged*
* *Old jobs have disappeared*
* *Old jobs have been enriched by new tasks*
* *Don’t know*

**4.1. Please provide examples *(short answer)***

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

***5. How has the content of work changed in your Company with the introduction of digital technologies? (single answer question)***

* *There has been an increase in the cognitive content of work (please go to question 5.1)*
* *There has been a decrease in the cognitive content of work (please go to question 5.2)*
* *Don’t know*

***5.1. Please describe it:***

* *Problem-solving*
* *Decision-making*
* *Suggestions for improvement*
* *Analysis of data*
* *Increased relations with colleagues (e.g. within working groups)*
* *Other (please specify: …………………..)*

***5.2. Why? (i.e. simplification of tasks) (short answer)***

*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

**6. As for your personal experience, please rate the following information on a scale of 1 to 5 (1 = strongly disagree - 5 = strongly agree)**

*Completely new technical skills are required to deal with new technologies*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

*Tackling the lack of digital skills is just one part of the solution, that needs to be complemented with the development of other technical and behavioral skills*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

*Modern workplaces require workers to perform different tasks, thus improving their versatility*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

***7. Please rate the following statements [1 = strongly disagree – 5= strongly agree]***

***My Company finds difficulty in supplying vacancies with professional profiles/talents with the necessary skills. (if 4-5, please, go to question nr. 9)***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

***8. How did your Company respond to workers’ lack of necessary skills?* *(multiple choice – max 3 answers)***

* *Job rotation*
* *Training programmes (please, go to question nr. 10)*
* *Selection of new professional figures*
* *Other (please, specify: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)*

**9. *Please rate the following statements [1 = strongly disagree – 5= strongly agree]***

***My Company is actively involved in the development of up-skilling and re-skilling initiatives for its workforce***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

***10. Please select the average age of workers involved in vocational training/re-training courses organized by your Company (rating by age group):***

* *16-24 years*
* *25-29 years*
* *45-54 years*
* *over 55 years*

***11. My Company is currently engaged in relationships with local/National:***

* *VET providers*
* *Schools*
* *Higher Education Institutions (e.g. Universities)*
* *None of the previous (please go to question 11.1)*
* *Other (please, specify:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)*

***11.1 Why?***

* *The collaboration would bring no real benefit to the Company/Organisation*
* *Lack of time to set up, implement and maintain the collaboration*
* *Lack of financial resources*
* *Due to past negative experiences of collaboration*
* *Absence of collaboration opportunities*
* *Other (specify:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)*

***12. How has the organization of work changed in your Company?***

* *Flatter hierarchies (reduction in the number of supervisors)*
* *Direct employee participation practices (e.g. via continuous improvement groups)*
* *Centralisation of power and decreased autonomy*
* *Outsourcing of activities*
* *Internalisation of activities*
* *Other (please, specify\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.)*
* *Don’t know*

***13. What have been the employment effects of the introduction of new technologies?***

* *Decrease of staff due to the introduction of automated solutions*
* *Increase of staff due to productivity improvements and new business activities*
* *No relevant changes*
* *Don’t know*

***Section 2 – Industrial/Employee relations***

***14. How have industrial/employee relations interplayed with digitalization in your Company? (multiple choice – max 3 answers)***

* *It has been necessary to initiate negotiations over some crucial topics (please go to question 15.1)*
* *Cooperative industrial relations have allowed to find efficient solutions to critical aspects*
* *Digital innovation has brought about serious conflicts between management and workers’ representatives (please go to question 15.2)*
* *Industrial relations have not affected and been affected by digitalization*
* *Other (please, specify\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)*

***15.1. Please, specify the main area of reference:***

* *Working time*
* *Workers’ skills development*
* *Organisation of work*
* Wage policy
* Welfare
* *Other (please, specify\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)*

***15.2. Please, explain why (short answer)***

***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***16. Please rate the following information on a scale of 1 to 5 (1 = strongly disagree - 5 = strongly agree)***

***Industrial relations are relevant enabler of technological and organizational innovation***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

***Section 3 – European Social Dialogue and final considerations***

***17. Please, describe briefly your expectations about European Social Dialogue’s role within innovations and technological-based changes occurring in the manufacturing sector.***

***Note: If you are not aware of European Social Dialogue aims & operating procedures, please do not consider questions 18-19.***

***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***18*. Please rate the following information on a scale of 1 to 5 (1 strongly disagree-5 strongly agree)**

*European social dialogue could contribute to face potential social and work problems related to digitalization of manufacturing through the provision of specific guidelines for Member States.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

*European social dialogue could contribute to guarantee a fair transition towards digital manufacturing combining new production paradigm with protection of workers.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

*European social dialogue could contribute to set up new schemes of work organization (i.e. working time, smart working) and reskilling strategies shared by social partners.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |

***19. If jobs are changing due to technology and automation, what measures manufacturers could take to solve today’s talents shortage while preparing their future workforce for success? Please list 2 initiatives already undertaken by your Company or that your Company is willing to start.***

***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Section 4 – Company profile***

* Business name

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Business activity (sector: drop-down menu NACE classification)
* Company size **(single answer question)**
  + micro enterprise: with less than 10 persons employed;
  + small enterprise: with 10-49 persons employed;
  + medium-sized enterprise: with 50-249 persons employed;
  + large enterprise: with 250 or more persons employed. TBD
* Role of the respondent in the Company (short answer)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_